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(54) **METABOLIC CALORIMETER EMPLOYING
RESPIRATORY GAS ANALYSIS**

(75) Inventors: **James R. Mault**, Evergreen, CO (US);
Edwin M. Pearce, Jr., San Francisco,
CA (US); **Theodore W. Barber**,
Belmont, CA (US); **Craig M.**
Lawrence, Menlo Park, CA (US);
Timothy J. Prachar, Palo Alto, CA
(US); **Jeffrey C. Weintraub**, San Jose,
CA (US); **Kevin S. Nason**, Mountain
View, CA (US)

(73) Assignee: **HealthTech, Inc.**, Golden, CO (US)

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patent is extended or adjusted under 35
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600/538**

(58) **Field of Search** 600/529, 532,
600/537, 538, 454, 531

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Primary Examiner—Robert L. Nassar

Assistant Examiner—Patricia Mallari

(74) *Attorney, Agent, or Firm*—Gifford, Krass, Groh,
Sprinkle, Anderson & Citkowski, P.C.

(57) **ABSTRACT**

The present invention provides an indirect calorimeter for
measuring the metabolic rate of a subject. The calorimeter
includes a respiratory calorimeter configured to be supported
in contact with the subject so as to pass inhaled and exhaled
gases as the subject breathes. A flow pathway is operable to
receive and pass inhaled and exhaled gases. A first end of the
flow pathway is in fluid communication with the respiratory
connector and a second end is in fluid communication with a
source and sink for respiratory gases. A flow meter
generates electrical signals as a function of the instantaneous
flow volume of inhaled and exhaled gases passing through
the flow pathway. A component gas concentration sensor
generates electrical signals as a function of the instantaneous
fraction of a predetermined component gas in the exhaled
gases as the gases pass through the flow pathway. A com-
putation unit receives the electrical signals from the flow
meter and the component gas concentration sensor and
calculates at least one respiratory parameter for the subject
as the subject breathes through the calorimeter.

6 Claims, 16 Drawing Sheets

